

HARTMANN



ISSUE 01/2021

# DISINFANTS

What remains after the  
vaccination?



Research for  
infection protection

# Breaking the chain of transmission

Even though vaccinations are a vital instrument in the fight against the pandemic, the existing hygiene guidelines such as minimising contact, keeping distance, hand hygiene, regular ventilation, wearing masks and using the Corona-Warn-App, remain crucial to breaking the chain of transmission.

## EDITORIAL

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# Editorial



Dear readers,

'April showers bring May flowers', goes the well-known proverb. We are now just ahead of schedule. The first thing that you may have already noticed while browsing through the current edition of DISINFACTS is our overhauled layout. A new logo, revamped font, bolder colours and rounded elements in place of the old square ones. Please take it as a sign of our optimism that we will keep tackling the coronavirus crisis – with solid determination and a bright look to the future, full of fresh ideas! The second innovation that I can reveal to you already is that our BODE SCIENCE CENTER will be getting a new name this year. You can find it on page 20.

But first, let us turn to the past by acknowledging a successful decade of the BODE SCIENCE CENTER and paying tribute to Max von Pettenkofer, Germany's first hygiene expert who died 120 years ago. After a quick glance at the past, we take a gaze at the present. To help you make sense of these challenging times, our team at DISINFACTS gathered all relevant knowledge on SARS-CoV-2, COVID-19 and the vaccines, as well as added helpful information on influenza vaccination, Avian Influenza and West Nile virus.

I wish you an insightful read. Stay healthy!

Dr. Henning Mallwitz  
Research & Development Director



## Hope versus reality:

# Vaccination against COVID-19

Throughout 2020, many of us have been eagerly anticipating the development and approval of COVID-19 vaccines. Towards the end of 2020, it seemed like the wait was finally over as the first vaccine was approved for use in the EU in December and the second and third followed suit shortly afterwards. Since mid-March, a fourth vaccine has been approved in the EU. Gradually, more vaccines will be approved and available on the market. The pressing question on everyone's mind is: what now?

### Vaccinations are only a single component. Hygiene is still essential

There is still no doubt that vaccinating against COVID-19 is a critical component in fighting the pandemic. However, what has become clear by now is that the approval of vaccines does not mean that the pandemic will end overnight.

According to the Robert Koch Institute (RKI) [1], 'effective and safe vaccinations represent an important building block for the protection of the population and the containment of the pandemic and can contribute to reducing the need for contact restrictions in the medium term'.

This implies that while vaccinations are essential to beating COVID-19, they are only a part of a multifold strategy. Containing the spread of new infections means that the existing hygiene measures must remain in place.

### Herd immunity, vaccination uptake and mutations

The extent to which vaccinations will have an impact on curbing the pandemic in the near future depends on multiple factors. Experts estimate that a **vaccination coverage rate of 60–70% is necessary** to combat the pandemic effectively [2].



However, a meaningful coverage rate – enough for life to return to normal – is not only a question of vaccine availability but also of people's willingness to be vaccinated. These uncertainties and concerns of people that arise in regards to vaccination's safety are best addressed through transparent information.

There is one factor, however, over which humans have no control. All viruses naturally mutate over time, and Sars-CoV-2 is no exception. It remains to be seen whether these mutations will affect vaccinations' effectiveness in the future, and if this is the case, how are we able to respond to these changes [3].

## Want to find out more about COVID-19 vaccines?

- Information from the Robert Koch Institute (RKI) on COVID-19 and vaccinations, including FAQ: <https://www.rki.de/EN/Content/infections/epidemiology/outbreaks/COVID-19/COVID19.html>
- WHO overview of international vaccine developments, mechanisms of action and more: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/covid-19-vaccines>
- Up-to-date reports from the Paul Ehrlich Institute on COVID-19 vaccines and their safety: <https://www.pei.de/EN/home/home-node.html;jsessionid=E30BEFEE EB5EE5DA138B6DCB551C6EB3.intranet212>

Sources:

1. Robert Koch-Institut (RKI). Epidemiologisches Bulletin 02/2021; [https://www.rki.de/DE/Content/Infekt/EpidBull/Archiv/2021/Ausgaben/02\\_21.pdf](https://www.rki.de/DE/Content/Infekt/EpidBull/Archiv/2021/Ausgaben/02_21.pdf)
2. Deutsches Ärzteblatt. News vom 30.11.2020; <https://www.aerzteblatt.de/nachrichten/118837/Fuer-Herdenimmunitaet-Coronaimpfrate-von-bis-zu-70-Prozent-noetig>
3. dos Santos WG. Impact of virus genetic variability and host immunity for the success of COVID-19 vaccines. Biomed Pharmacother. 2021; 136: 111272. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7802525/>

## Hygiene measures during vaccine administration

### The importance of SOP compliance

Be it against whooping cough, influenza or COVID-19, the purpose of vaccinations is to protect the vaccinated person and the community against infectious diseases. However, like any invasive procedure, they can carry a small risk of infection, especially at the site where the needle enters the skin. Ensuring that all steps are carried out under strict hygienic conditions is enough to prevent this risk of pathogens on the skin or surfaces from getting into close contact with the vaccinated person's tissue.

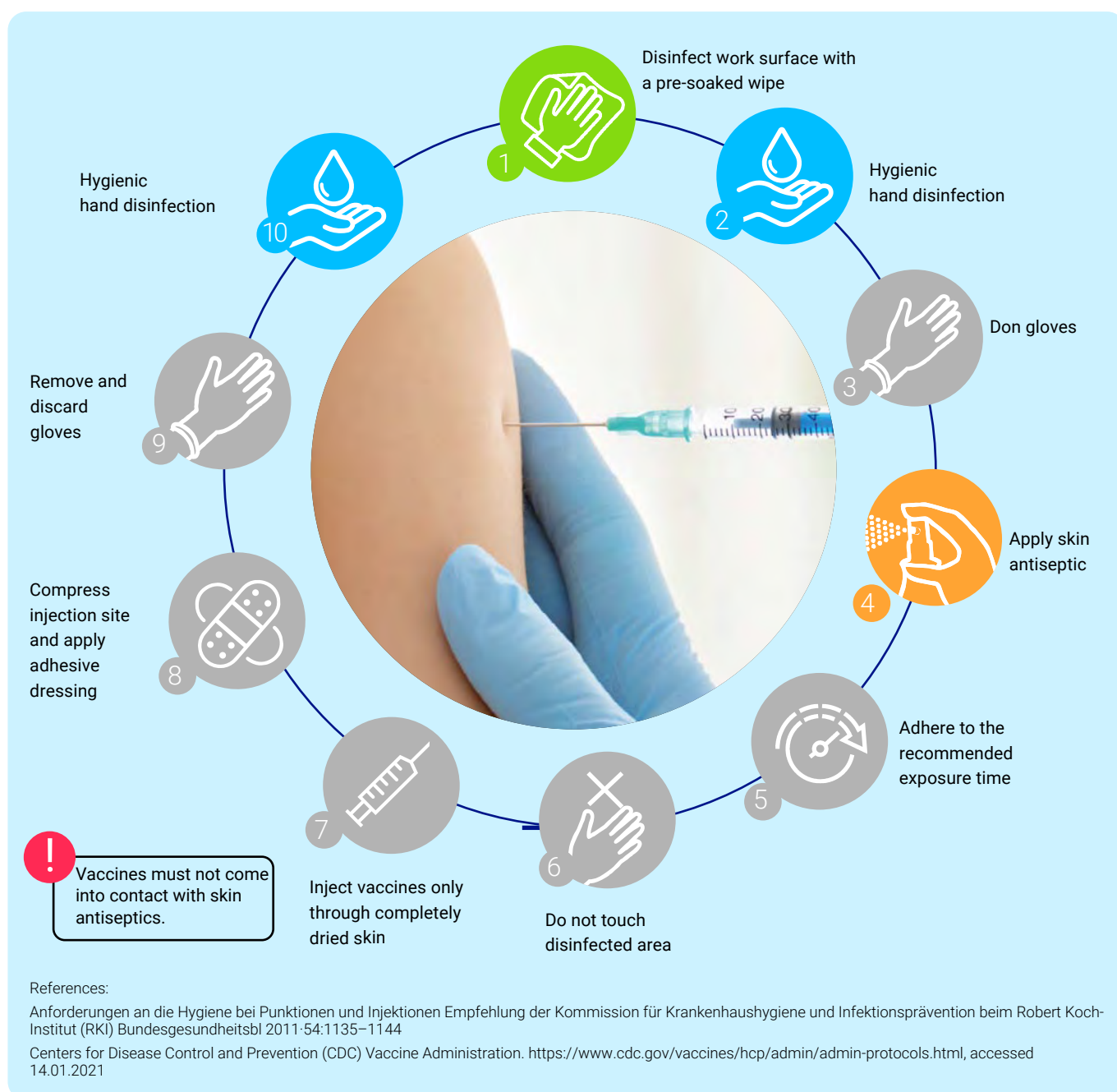
### Step-by-step injection guide

The 'Hygienic Vaccination' SOP aims to clearly and carefully guide you through the process of vaccine administration. Thanks to our graphic overview, you can quickly see which materials are needed at which stage and what can be done to avoid common mistakes



The 'Hygienic Vaccination' SOP is also available to download from our website at [http://bit.ly/hygienic\\_vaccination](http://bit.ly/hygienic_vaccination)

## HYGIENIC VACCINATION: HOW TO GET IT RIGHT?



## SARS-CoV-2 antigen tests

### Extra degree of safety upon correct application

Antigen tests for SARS-CoV-2 are currently on everyone's lips – as well as inside our noses or throats. When used correctly, they are a valuable addition to the more sensitive PCR tests. These tests should be used when there is no well-grounded suspicion of infection and where COVID-19 testing is intended to provide an additional degree of safety. For example, they can prove very useful in old people's and

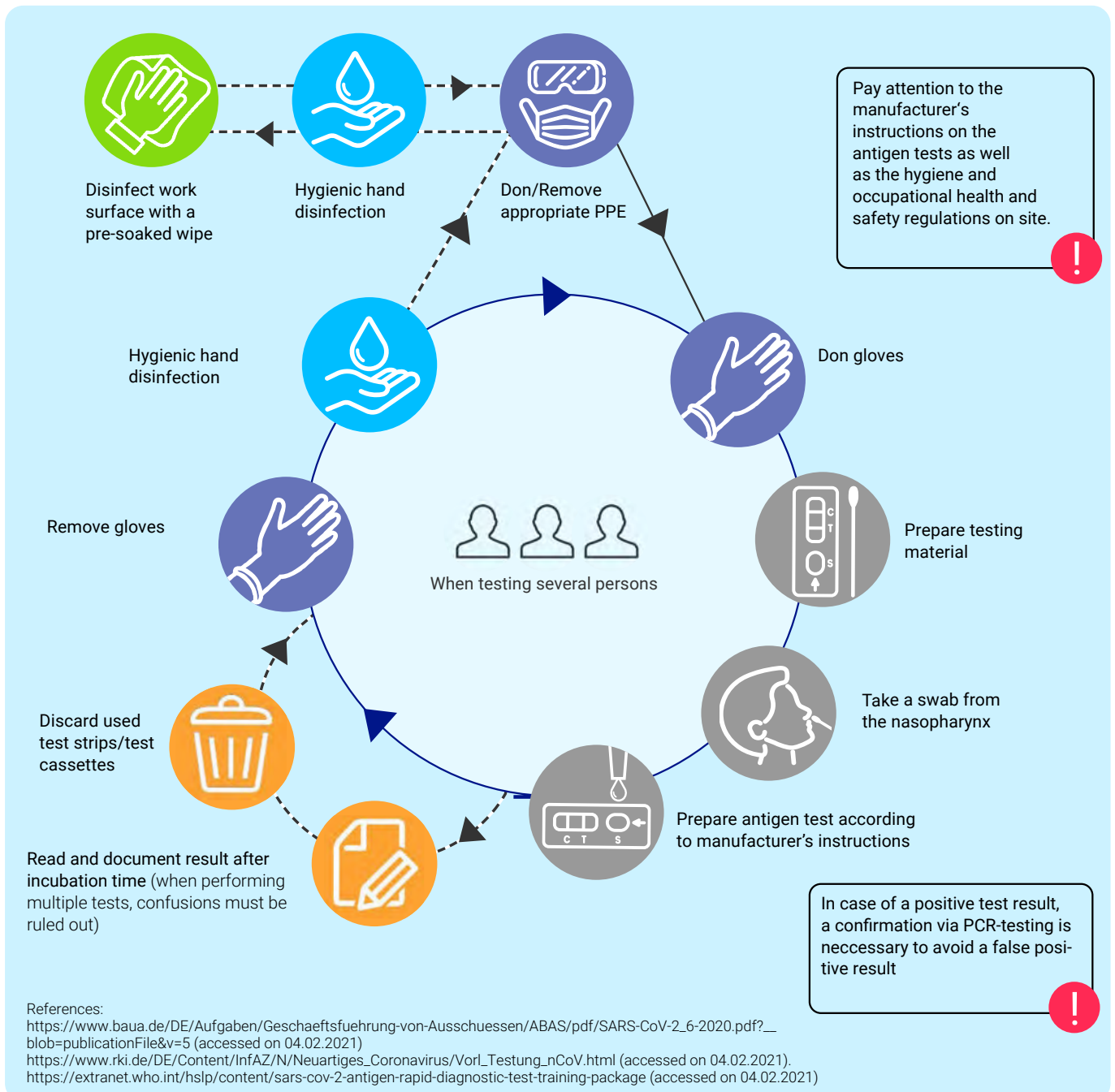
nursing homes, especially when outsiders enter the building to visit their relatives. Of course, a negative test result is never a free pass for being careless. To avoid a risk of infection, all previous hygiene measures should still be observed.

To reduce any uncertainties regarding the correct application of antigen tests, have a look at our step-by-step guide below.



The 'Correct Use of Antigen Tests' SOP is also available to download from our website: [http://bit.ly/antigen\\_tests](http://bit.ly/antigen_tests)

### ANTIGEN TESTS – CORRECT USE



A space-saving slim design:

# The new Wall Holder Plus

Every year in Germany, between 400,000 and 600,000 people are infected with nosocomial infections during a hospital visit. Hand hygiene is a crucial factor needed to break the chain of transmission. Correctly placing hand disinfectant dispensers improves staff's workflow and leads to greater hygiene compliance [1].

Thanks to its slim design, the new Wall Holder Plus (with optional drop catcher) can be mounted to almost any wall, meaning it is available to support the staff at every step of their daily routine!

As of now, the Wall Holder Plus for 350/500 ml bottles complements our proven dispenser range.



Sources:

1 Händehygiene in Einrichtungen des Gesundheitswesens – Empfehlung der Kommission für Krankenhaushygiene und Infektionsprävention (KRINKO) beim Robert Koch-Institut (RKI). Bundesgesundheitsbl, 2016, 59:1189–1220.)

**Sterillium med:** *Active substance:* Ethanol 99 %. **Indications:** Hygienic and surgical hand disinfection. *Microbiological efficacy:* Bactericidal, yeasticidal, virucidal and limited virucidal activity PLUS (incl. Adeno-, Noro- and Rotavirus). **Warnings and precautions:** Use only externally. Due to the content of alcohol, frequent application of the drug on the skin may cause irritation or inflammation. Do not bring into contact with open flames. Keep away from sources of ignition - do not smoke. Flash point according to DIN 51755: approx. 16 °C, highly flammable. When the preparation is used as intended, fire and explosion hazards are not to be expected. After spilling the disinfectant, the following measures must be taken: immediately absorb the liquid, dilute with plenty of water, ventilate the room and eliminate sources of ignition. In case of fire, extinguish with water, extinguishing powder, foam or CO<sub>2</sub>. Any decanting may only be carried out under aseptic conditions (laminar airflow cabinet). **Marketing authorisation holder and manufacturer:** BODE Chemie GmbH, Melanchthonstraße 27, 22525 Hamburg. **Date of preparation:** September 2020

For information on risks and side effects read the package leaflet and ask your doctor or pharmacist.

*Use disinfectants safely. Always read the label and product information before use.*

## SARS-CoV-2 as a nosocomial pathogen

# Preventing outbreaks in healthcare facilities

The COVID-19 pandemic showed us that in order to have a functioning healthcare system and, consequently, a healthy society, we need to concentrate on protecting our healthcare workers first. Successful prevention of future transmissions in vulnerable areas such as hospitals, clinics and old people’s and nursing homes is only possible with regular assessments that track how infections origin and spread in healthcare facilities.



### Is the risk of infection higher for healthcare professionals?

Are health workers at a higher risk of contracting SARS-CoV-2 than the general population? Data from the World Health Organization (WHO) suggest that this is, unfortunately, the case: in most countries, healthcare workers make up about 2–3% of the population, yet by September 2020, about 14% of COVID-19 cases reported to the WHO were attributed to this particular occupational group [1].

Additionally, a study in London showed that in March and April 2020, almost one in ten hospitalised patients developed a COVID-19 infection in a hospital [2]. Of course, at that time, the pandemic had just started unfolding, and suitable protective measures were yet to be established and adequately implemented.

After one year of dealing with the pandemic and

a strict adherence to protective measures, we can assume that the risk of transmission in hospitals has largely decreased, providing the necessary protective and hygiene measures are observed, both from the perspective of the staff and the patients [3].

### Healthy staff means improved safety of the patients

It is important to note that, during the pandemic, healthcare workers are not only exposed to physical risks but also to high mental and psychological stress. Since the outbreak of COVID-19, almost one in four healthcare workers has suffered, or is suffering, from depression or anxiety.

One in three struggles with insomnia. It appears that nursing staff is more affected than medical staff [4]. Ensuring the health and well-being of nursing and medical staff is crucial to providing adequate care to patients. It is imperative that both the government and the institution’s management take appropriate measures to address these issues.

This can be done, for example, by introducing reasonable working hours, ensuring sufficient staff numbers and offering mental and psychological support programmes [1].

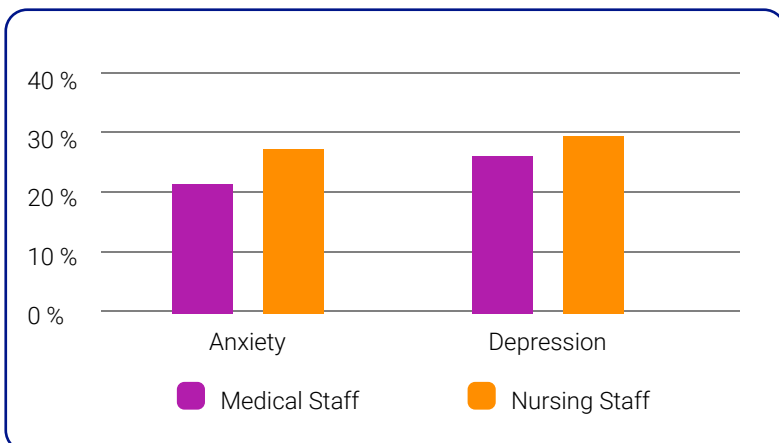
### Strict compliance with hygiene rules means no staff shortages

Ideally, all applicable protective measures in the healthcare and private sector are so well implemented and observed that any outbreaks or suspected cases in healthcare and nursing facilities are prevented from happening in the first place

Despite the stress on compliance, past experiences have shown that, in reality, these outbreaks still do happen. It remains to be seen whether the situation will ease with the increasing vaccination coverage of the prioritised groups. In the meantime, we must

## DEPRESSION AND ANXIETY

among health workers during the COVID 19 pandemic [4].







remember that the most significant factor limiting the likelihood of an outbreak is compliance with hygiene rules. An emphasis on outbreak prevention is essential to protecting the most vulnerable groups avoiding staff shortages due to illness or quarantine. Unfortunately, the current situation may currently

**'No country, no hospital and no clinic can protect their patients without protecting healthcare staff first' [1]**

present a conflict between preventing the infection and providing care as staff's contact with the patient often means a risk of viral exposure. The Robert Koch Institute (RKI) offers some solutions in their regularly updated recommendations on the management of staff

contact in the event of staff shortages in old people's and nursing homes [5].

## New guidelines by KRINKO

regarding general infection prevention of immunocompromised patients in healthcare settings

Immunocompromised patients are at an exceptionally high risk of potentially life-threatening complications from nosocomial infections, including COVID-19. At the beginning of 2021, the Commission for Hospital Hygiene and Infection Prevention (KRINKO) published a revised medical care recommendation for this group of patients. This can be accessed at:

<http://bit.ly/Infektionspraevention>

### Sources:

1. Weltgesundheitsorganisation (WHO). Keep health workers safe to keep patients safe. 17.09.2020; <https://www.who.int/news/item/17-09-2020-keep-health-workers-safe-to-keep-patients-safe-who>
2. Price JR, Mookerjee S, Dyakova E, et al. Development and Delivery of a Real-time Hospital-onset COVID-19 Surveillance System Using Network Analysis. *Clin Infect Dis* 2021;72: 82–89; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7454383/>
3. Richterman A, Meyerowitz EA, Cevik M. Hospital-Acquired SARS-CoV-2 Infection: Lessons for Public Health. *JAMA* 2020;324: 2155–2156; <https://jamanetwork.com/journals/jama/fullarticle/2773128>
4. Pappa S, Ntella V, Giannakas T, et al. Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. *Brain Behav Immun* 2020;88: 901–907; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7206431/>
5. Robert Koch-Institut (RKI). Optionen zum Management von Kontaktpersonen unter medizinischem und nicht medizinischem Personal in Alten- und Pflegeeinrichtungen bei Personalmangel (Stand: 03.02.2021); [https://www.rki.de/DE/Content/InfAZ/N/Neuartiges\\_Coronavirus/Personal\\_Pflege.html](https://www.rki.de/DE/Content/InfAZ/N/Neuartiges_Coronavirus/Personal_Pflege.html)

# Flu Season 2020/2021

## Do COVID-19 protective measures prevent the flu outbreak?

As SARS-CoV-2 began to spread over a year ago, there was great concern about the possibility of a clash with influenza ('flu'). While both the winter and flu season were coming to an end in the northern hemisphere, in the southern part of the world – such as Australia – , it was just beginning. Surprisingly, in 2020, the cold had arrived there without bringing the usual spike in influenza cases [1].

### An abrupt end of the 2019/2020 flu wave in Germany

Officially, Germany's flu season runs from week 40 of each year to week 20 of the following year, with its peak falling between week 1 and 15 [2]. 2020 was different. Lockdown and preventive measures against the newly emerging SARS-CoV-2 virus seem to have slowed down not only the virus in question but also the influenza viruses. This has led to an abrupt end of Germany's flu wave already in week 12 (see also DISINFANTS 1/2020, p. 9!)

Looking at the data from Australia, we can notice that another preventative measure – border closures – also contributed to the low transmission of influenza. This resulted in a very low number of infections among children, despite the winter season and schools reopening [1].

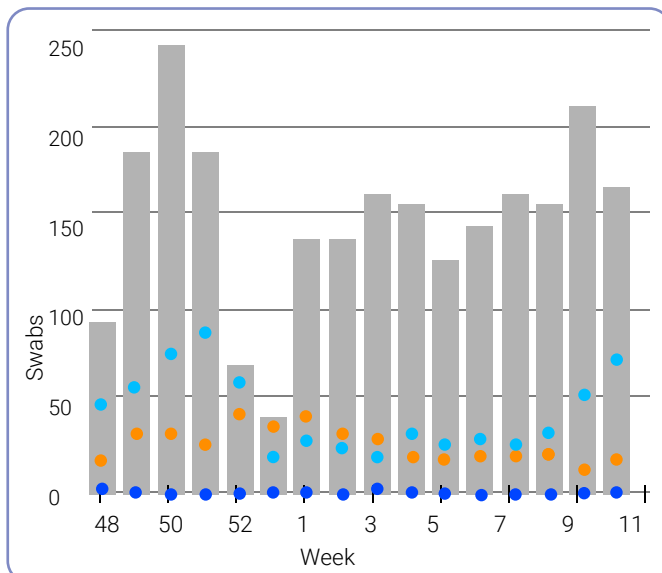
### Flu season 2020/2021 fails to gain momentum

Current detection rates for acute respiratory infections (ARI) also suggest that increased compliance with hygiene rules effectively prevented a spike in influenza cases. The data from ARI monitoring by the National Reference Centre (NRC) shows that the 2020's detection rates for influenza viruses have been significantly lower than those for SARS-CoV-2 and rhinoviruses [3]. Due to a lack of data, we cannot yet assess the extent to which a higher uptake of influenza vaccines in 2020 played a role in this. However, since the beginning of the COVID-19 pandemic the total number of influenza cases has decreased globally and irrespective of country-specific vaccination rates. This, researchers assume, means that increased influenza vaccination rates had a minor influence on the falling number of cases [4].

As positive as the absence of the influenza wave is, this drop also brings a particular risk: the lack of viral reference samples could make it challenging to predict potentially circulating 2021/22's influenza strains and thus adequately modify the existing vaccines [1].

## DETECTION OF RESPIRATORY VIRUSES

by the National Reference Centre (NRC) – adapted from [3]



Sources:

1. Yeoh DK, Foley DA, Minney-Smith CA, et al. Impact of Coronavirus Disease 2019 Public Health Measures on Detections of Influenza and Respiratory Syncytial Virus in Children During the 2020 Australian Winter. *Clin Infect Dis*. 2020 Sep 28; ciaa1475; <https://academic.oup.com/cid/advance-article/doi/10.1093/cid/ciaa1475/5912591>
2. Arbeitsgemeinschaft Influenza (AGI) am Robert Koch-Institut (RKI). Karten der Aktivität akuter respiratorischer Erkrankungen in Deutschland (ARE-Aktivität); <https://influenza.rki.de/MapArchive.aspx> (abgerufen am 08.02.2021)
3. Arbeitsgemeinschaft Influenza (AGI) am Robert Koch-Institut (RKI). Diagramme Deutschland (gesamt) - Saison 2020/2021; <https://influenza.rki.de/Diagrams.aspx?agiRegion=0> (abgerufen am 08.02.2021)
4. Fricke LM, Glöckner S, Dreier M, et al. Impact of non-pharmaceutical interventions targeted at COVID-19 pandemic on influenza burden - a systematic review. *J Infect* 2021;82: 1–35; <https://doi.org/10.1016/j.jinf.2020.11.039>

# 28 April: World Day for Health and Safety at Work

## Germany registers a decrease in workplace accidents for 2020

According to the International Labour Organization (ILO), around 2.8 million people die every year due to workplace accidents or illnesses contracted in the context of their work. To increase the global awareness of workplace safety, each year on 28 April, the UN celebrates the 'World Day for Health and Safety at Work'. As a response to the COVID-19 pandemic, this year's goal is to encourage establishing effective Occupational Safety and Health Management Systems (OSHMS) with the slogan: 'Anticipate,

prepare and respond to the crisis: Invest now in resilient OSH systems'. One positive impact of COVID-19 in Germany respectively was a decrease in number of accidents at work. According to the German Social Accident Insurance (DGUV), the number of accidents at work fell by 12.8 per cent (to 760,369 accidents) in 2020, as compared to the previous year. As a result of work-related accidents, a total of 397 people died in Germany last year (100 fewer than in 2019).

More information about the campaign can be found at: [www.ilo.org](http://www.ilo.org)

## Study: Self-contamination risks

### Caregivers frequently contaminate themselves with respiratory viruses

A study by the 'Infection Control & Hospital Epidemiology' journal has found that caregivers frequently contaminate themselves through self-contact with personal protective equipment (PPE) during routine care of patients with viral respiratory diseases. A group of researchers examined the contamination of the PPE and the underlying clothing, hands and face of 59 hospital employees. After the PPE was taken off, the researchers found the relevant viruses on caregivers' hands (21%), clothing (11%) and face (7%).

These rates of contamination pose a significant risk of further viral transmission. To prevent infection hazard, researchers advise proper hand hygiene and self-contact avoidance – both when putting on/taking off PPE and during patient care.

Source:  
Phan, L., Sweeney, D., Maita, D., Moritz, D., Bleasdale, S., & Jones, R. (2019). Respiratory viruses on personal protective equipment and bodies of healthcare workers. *Infection Control & Hospital Epidemiology*, 40(12), 1356-1360. doi:10.1017/ice.2019.298

### HEALTH & SAFETY POSTER

Gloves, protective gown, face mask and safety goggles. In which order should you put on and take off all the components of personal protective equipment (PPE)? How often – and whether – should you disinfect your hands? A poster made by the BODE SCIENCE CENTER provides a clear explanation of the procedure. We are keeping you on the safe side at all times!

Download at:  
[http://bit.ly/Poster\\_PPE](http://bit.ly/Poster_PPE)



## Pandemic practices in the A&E

### 'If you suspect COVID-19, wear protective goggles and gowns'

Personal safety is an important issue for paramedics. Michael Paul from the DRK Kreisverband Stuttgart reports on what has changed as a result of the pandemic in terms of occupational safety:

'We have changed the hygiene rules at our emergency station. We now observe social distancing, and if we are not able to keep the required gap, we are obliged to put on a mask.

In general, all the employees at the station now pay more attention to hand hygiene. The operations have also changed.

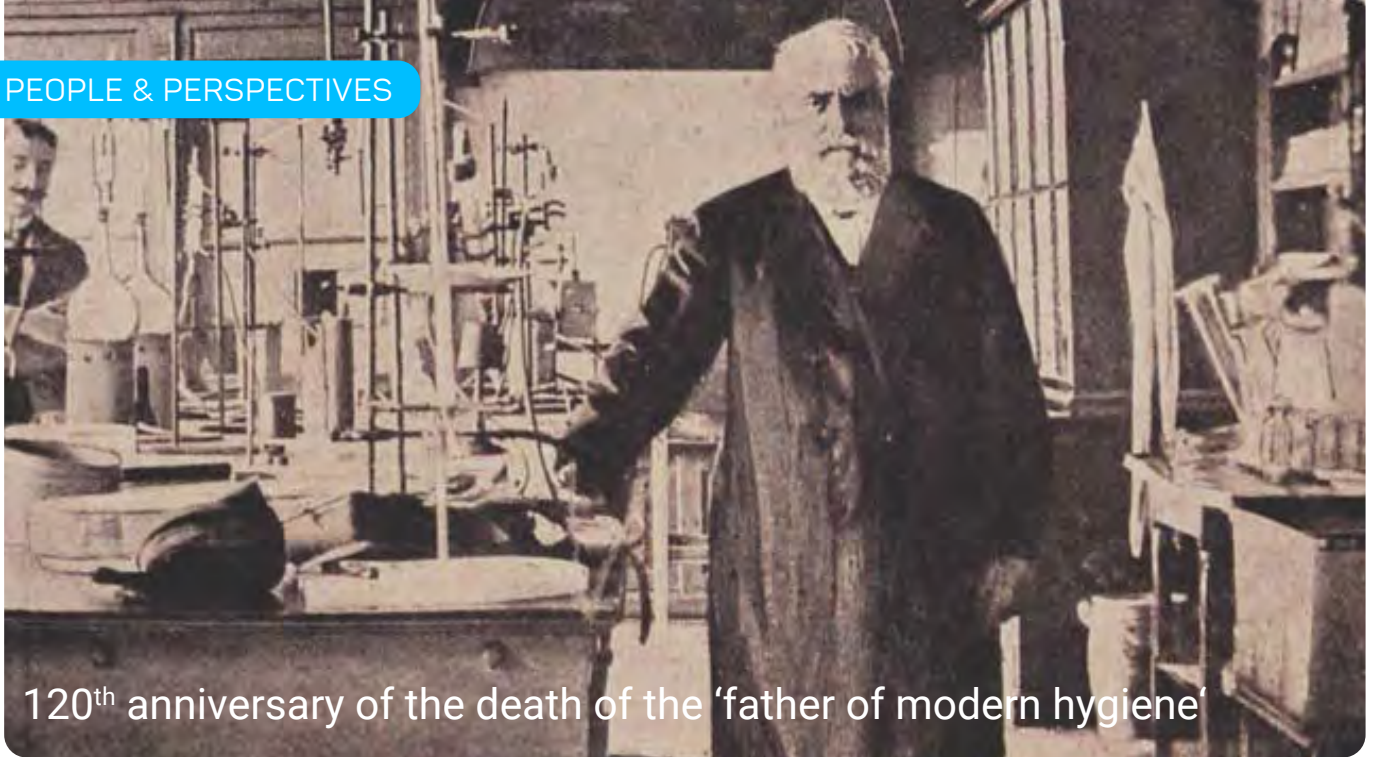
Nowadays, we read the reports with a sharper eye and consider beforehand whether extended protective measures are necessary.



As a rule, all staff members wear a FFP2 mask and protective gloves whenever they have contact with patients. If a COVID-19 infection is suspected, protective goggles and gowns are added.

All the disinfection procedures after a mission have remained the same. We have standard procedures. If a patient is suspected of having COVID-19, we disinfect the entire vehicle according to these guidelines. This has become more frequent because the number of suspected cases has increased. The amount of administrative work has also grown; it is difficult to obtain the necessary protective equipment and ensure sufficient stock quantities'.





120<sup>th</sup> anniversary of the death of the 'father of modern hygiene'

# Max von Pettenkofer:

## Pursuing the right goal with the wrong assumption

Born on 3 December 1818 as the fifth of eight children, Max von Pettenkofer spent the first years of his life in poverty. Under his godfather's care, he obtained higher education in natural sciences and was soon considered part of the scientific elite. Despite a false assumption about the spread of disease, he revolutionised the hygiene situation in Munich and freed it from the cholera epidemic [1, 2, 3]. The 120th anniversary of his death fell on 10 February 2021.

### Pathogenic vapours from soil

When von Pettenkofer began researching the origins of cholera in the middle of the 19th century, the experts were divided into two camps. While some assumed that it was humans who transmitted cholera, von Pettenkofer, as a proponent of the miasma theory, believed in connection with vapours from the soil. Although he suspected that some kind of a 'germ' existed in humans, he was convinced that infectiousness only arose through contact with contaminated soil and its vapours [1].

Even though his assumption was wrong, it prompted him to do the right thing. His thesis prompted the implementation of extensive sanitary reforms in Munich, a city that at that time was immersed in filth and sewage. Other sanitary reforms that he initiated was ensuring the access to hygienic drinking water supply and the expansion of the sewage system. All these changes had a drastic impact on cholera and typhoid mortality reduction [1, 2].

### Paving the way for modern environmental medicine

Von Pettenkofer's research was not limited to cholera. He was a pioneer of his times, with a focus on all environmental factors that could significantly impact humans and their health: air, water, soil, sewage, river pollution, heating, clothing and the urban environment [1, 2]. In the course of his investigations, he dealt, among other things, with the quality of indoor air. He defined what is now known as the von Pettenkofer number – a maximum CO<sub>2</sub> value of 1000 ppm, which until recently was used to ensure healthy indoor spaces [4].

### Rivalry between scientists

After decades of pioneering work in the field of hygiene, von Pettenkofer's esteem suffered a fatal blow when his rival Robert Koch discovered the cholera bacterium *Vibrio comma* (now *Vibrio cholerae*) in 1883. This has meant that von Pettenkofer's miasma theory was discredited. In an attempt to prove that Robert Koch was lying and restore his own reputation, von Pettenkofer got carried away and drunk a solution containing the *Vibrio*, after which he suffered from diarrhoea but did not die. However, by that point, it was too late to reverse the downturn in his career. Von Pettenkofer was gradually sidelined from the scientific community and took his own life at the age of 82 [4].

### Sources:

1. Locher WG. Max von Pettenkofer (1818–1901) as a Pioneer of Modern Hygiene and Preventive Medicine. *Environmental Health and Preventive Medicine* 2007;12: 238–245; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2723483/>
2. Evans AS. Pettenkofer Revisited. The Life and Contributions of Max von Pettenkofer (1818-1901). *Yale Journal of Biology and Medicine* 1973;46: 161–176; <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2591993/>
3. <http://www.mvp.uni-muenchen.de/institut/geschichte/> (abgerufen am 25.01.2021)
4. <https://www.co2-modell.nlga.niedersachsen.de/>. Tab "Mehr Infos/Luftqualität und CO<sub>2</sub>-Konzentration" (abgerufen am 25.01.2021)
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# Zoonotic diseases pose a threat to humans

Experts have been warning us of a global pandemic for decades. Why is it only SARS-CoV-2 that has shaken up the world? The majority of pathogens with pandemic potential are found in wild animals, yet they rarely spread to humans. What we must remember, however, is that the risk of pathogen transmission to humans is now greater than ever – due to factors such as globalisation, climate change, destruction of ecosystems, and growing population density [1].

## West Nile Virus: A long journey from Africa

First reported in Uganda in 1937, the West Nile virus (WNV) has been spreading to Asia, North America and Europe since the 1990s [2]. In the last decade, the European Centre for Disease Prevention and Control (ECDC) has noticed a worrying upwards trend and an increasing spread in Europe. This increase was triggered by climate change and rising temperatures which enabled the vectors to survive further north. The trend comes with a disheartening report from 2019 – both Germany and Slovakia reported their first autochthonous, i.e., acquired in the respective country and not imported, WNV infection in humans [3].

Usually, WNV is transmitted by mosquitoes between their natural hosts, i.e., wild birds. However, the virus can be also spread through a bird-to-mosquito-to-human transmission cycle, through the bites of infected mosquitoes. While the infection is often asymptomatic or mild, it poses a risk of severe neuro-invasive diseases that can have a fatal outcome. As of now, the only reliable protection against the virus is bite prophylaxis (appropriate clothing, mosquito repellents, nets, etc.).

## Wild animals as reservoirs of numerous pathogens

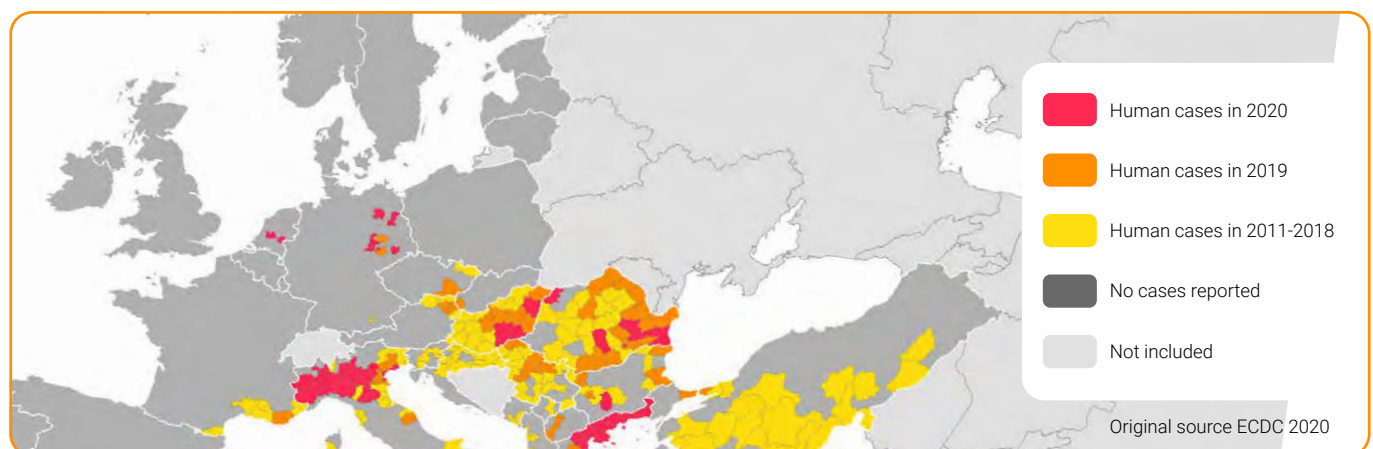
The number of unknown pathogens lying dormant in wild animals is believed to be infinite. When it comes to known zoonotic pathogens, however, the list is not much shorter. Avian influenza ('bird flu'), which has made it to the headlines regularly for two decades, has also originated in birds, while the origin of Ebola and MERS coronavirus is attributed to megabats and microbats.



## Fact Sheet West Nile Virus [4]

- Enveloped, single-stranded RNA virus (flavivirus)
- Natural reservoir in birds
- Transmission by mosquitoes
- Can infect humans and other mammals
- Feverish, flu-like infection in 20 % of infected persons, sometimes with rash
- Neuro-invasive form with meningitis or encephalitis is rare (one in 100 infected persons), fatal in 5–10 %
- No vaccination or specific therapy
- Increasing spread also in Europe (see map)

## DETECTION OF WNV INFECTIONS IN HUMANS IN EUROPE AND THE REGION



Sources:

1. Di Marco M, Baker ML, Daszak P, et al. Opinion: Sustainable development must account for pandemic risk. PNAS 2020;117: 3888–3892; <https://doi.org/10.1073/pnas.2001655117>
2. Clark MB, Schaefer TJ. West Nile Virus. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020. <http://www.ncbi.nlm.nih.gov/books/nbk544246/>
3. ECDC. Epidemiological update: West Nile virus transmission season in Europe, 2019; <https://www.ecdc.europa.eu/en/news-events/epidemiological-update-west-nile-virus-transmission-season-europe-2019>
4. Robert Koch-Institut. West-Nil-Fieber im Überblick (Stand: 16.09.2020); [https://www.rki.de/DE/Content/InfAZ/W/WestNilFieber/West-Nil-Fieber\\_Ueberblick.html](https://www.rki.de/DE/Content/InfAZ/W/WestNilFieber/West-Nil-Fieber_Ueberblick.html)

prevenIRAS:  
infection prevention in Spanish

# A project dedicate

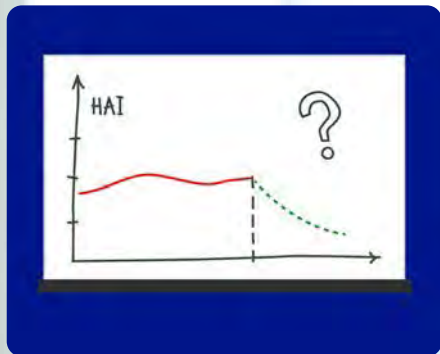
Every year, there are 3.8 million healthcare-associated infections that add an incredible 16 million days of hospitalisation across Europe [1].

Download  
the full study at:  
<https://t1p.de/ohvt>





# ed to infection prevention



## Focus on infection risks

It should come as no surprise that reducing infection risks is a major priority for all stakeholders. The study conducted at Bellvitge Hospital in Barcelona aimed exactly that: reducing risk of infection. The measures that were implemented included, amongst other things: standardizing care processes in the form of HARTMANN's Plan prevenIRAS (HARTMANN Spain) that aimed to improve compliance with hygiene steps.

The study was based on observations and questionnaires to measure compliance with hygiene measures as well as employee satisfaction during the process – a crucial and human aspect that is often overlooked.

## One of the most common infections: urinary tract infections...

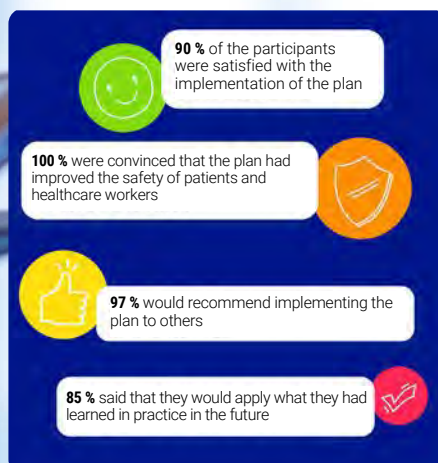
... Especially those associated with urinary retention catheters. The risk of infection can be significantly reduced just by improving the hygiene measures when inserting and handling urinary catheters and following a correct procedure.



## Mission Impossible or the path to success?

Over a period of 30 months, more than 120 staff members at the hospital were trained, told to record all catheterisations and asked to implement working methods and product solutions from HARTMANN, including MediSet Advance, Sterillium® Med and the Eurodispenser® 3 flex. In collaboration with the hospital, HARTMANN helped them to optimise the catheterisation process.

The Standard Operating Procedures (SOPs) were displayed in a graphic format and hung up at strategic locations in the hospital to remind staff to comply with the hygiene measures at every step. All communication aimed to serve as a cheerful and playful reminder rather than a stern and prohibitive one. The Observe App was used to monitor the implementation of the processes and evaluate compliance.



## The results speak for themselves

The compliance within the relevant hygiene steps was greatly improved through the implementation, training, and observation of the optimised process for urinary catheterisation. One example of success? Hand hygiene compliance before aseptic procedures has increased from 16% to 54%! The implementation of the programme also resulted in greater satisfaction among the hospital staff.

Sources:

1. Suetens et al. (2018): Euro Surveill. Prevalence of healthcare-associated infections, estimated incidence and composite antimicrobial resistance index in acute care hospitals and long-term care facilities: results from two European point prevalence surveys, 2016 to 2017.

## 10 years of BODE SCIENCE CENTER

# Looking towards the future with a new name



Research for  
infection protection



Research for  
infection protection

This year, the BODE SCIENCE CENTER (BSC) celebrates its tenth anniversary with a new name! Dr Heide Niesalla, head of the BSC, reflects on the past and ventures into the future under the name of HARTMANN SCIENCE CENTER.

'The planned renaming of the BSC aimed to acknowledge the gradual merger of BODE Chemie GmbH into the HARTMANN GROUP. However, this change does not affect our work and scientific orientation in any way. We will continue to follow the path we have taken so successfully over the past ten years. Our claim 'We research for infection protection' sets the direction. Its importance is particularly evident during the COVID-19 pandemic: with our knowledge transfer and expert advice through our contact point, we help to ensure that our disinfection products are used correctly by sharing our knowledge and providing expert advice. For instance, with the development of posters and infographics, we support implementing hygiene measures when vaccinating and carrying out antigen tests.



Personally, this is what makes the work at the BSC so unique and exciting: the diverse tasks with high relevance for infection prevention and patient safety. This is demonstrated by our successful collaborations

with academic, clinical or industrial partners, where we have worked on providing concrete solutions for infection control.

For me, these are the highlights of our work. These include studies with the University Medical Centre Hamburg-Eppendorf, the Charité, the University of Ulm and the Heidenheim Clinic, published jointly. Other projects include the development of the hygiene apps 'Observe' and 'My Hygiene SOP'.

These apps reflect how important electronic media have become for us: we still print the DISINFANTS magazine, however, since last year, we have also decided to publish it in a digital format. In addition, our customers can always find the current information on the BSC website. There are also regular email newsletters and eLearning tools that include relevant training content.

In addition to our professional and scientific expertise, the key to our success is the extensive and direct exchange of knowledge with experts from the field and with our customers. This is the foundation on which we will continue to build in the future and which we want to expand!

## Feedback: Das sagen unsere Kunden

'I have used the BSC many times. It has always worked very well: I received answers promptly and was always glad to have someone I could ask quickly, even with particular questions'.

Heiko Noffke, Hygiene Specialist,  
Friesland Clinics GmbH, Sande

'We have appreciated BODE's scientific service for years and use the BSC on a case-by-case basis, for example, in the event of a skin problem during hand disinfection. In a way, DISINFANTS is part of our technical literature'.

Torsten Germeier, Hygiene specialist,  
Roland Clinic GmbH, Bremen

'My first point of contact is HARTMANN's sales force. However, I prefer to use the BSC website. It's great and you can always find a meaningful answer quickly'.

Insa Sinteck-Albrecht  
Purchasing and Logistics,  
Wilhelmshaven Clinic GmbH

Sources:

- 1 Kampf et al. (2013) Improving patient safety during insertion of peripheral venous catheters: an observational intervention study. GMS Hygiene and Infection Control 2013; 8(2):DOC18
- 2 Kampf et al. (2014) Effective reprocessing of reusable dispensers for surface disinfection tissues – the devil is in the details. GMS Hyg Infect Control 2014;9(1):Doc09
- 3 Diefenbacher et al. (2019) A quasi-randomized controlled before-after study using performance feedback and goal setting as elements of hand hygiene promotion. J Hosp Infect 2019. pii: S0195-6701(19)30059-3
- 4 Aghdassi et al. (2020) A multimodal intervention to improve hand hygiene compliance in peripheral wards of a tertiary care university centre: a cluster randomised controlled trial. Antimicrob Resist Infect Control (2020) 18;9(1):113



# Our contribution to better infection prevention – highlights from the past ten years:

2011

Establishing the Expert Customer Support: 1,000 questions, one BODE SCIENCE CENTER!

Launch of the BSC website: 'www.bode-science-center.com' as a knowledge portal for all questions relating to disinfection and infection protection (with pathogen search, concentration calculator, articles on hygiene measures and current topics, etc.)  
<https://www.bode-science-center.com>



2012

eLearning programmes on hand hygiene: Learning important measures in a playful way

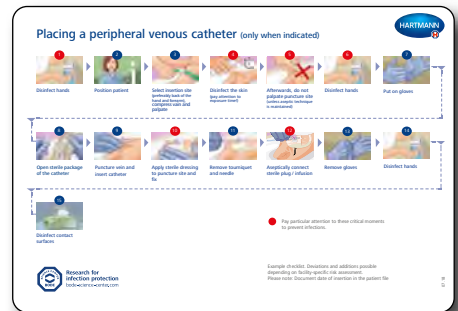
<https://www.bode-science-center.com/center/e-learning.html>



2013

SOPs for PVC - from research to practice: Development of SOPs with hygiene-relevant steps for the placement of a peripheral venous catheter (PVC); applied in a joint study with multimodal intervention at the University Medical Centre Hamburg-Eppendorf.[1,2]

[http://bit.ly/study\\_dispensers](http://bit.ly/study_dispensers)      [http://bit.ly/study\\_patientsafety](http://bit.ly/study_patientsafety)

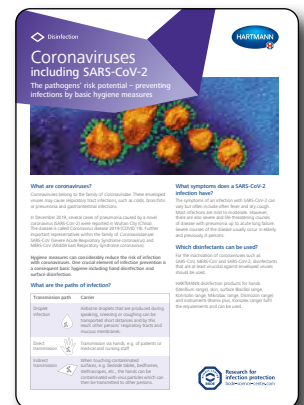


2014

Reprocessing of wipe dispensers for surface disinfection: Collection and examination of contaminated wipe dispensers; development and publication of a new set of reprocessing guidelines.

2017

'Observe' app: Developing an app for monitoring and analysing hand hygiene compliance.



2019

Psychological aspects of hygiene: Improving hand hygiene through a novel approach combining goal setting and feedback at group level. Study in cooperation with the University of Ulm at Heidenheim Hospital [3] [http://bit.ly/study\\_hygiene](http://bit.ly/study_hygiene)

'My Hygiene SOP' app: Developing an app for defining, observing and analysing nursing and medical measures and other relevant processes and SOPs

2020

Better hand hygiene compliance before aseptic tasks Successful multimodal intervention in a study with the Charité; the HARTMANN SOPs, the Eurodispenser 3 flex and the Observe App were used [4].

[http://bit.ly/multimodal\\_intervention](http://bit.ly/multimodal_intervention)

Intervention study	
by Charité in Berlin with the active involvement of the BODE SCIENCE CENTER	
Study design	Two-arm cluster randomised intervention study
	10 normal wards for intervention      10 normal wards for control
Study period	2017-2018; intervention phase of one year
Interventions	<ul style="list-style-type: none"> <li>Focus on aseptic tasks</li> <li>Team meetings with feedback systems</li> <li>SOPs for aseptic process</li> <li>Training videos</li> <li>Eurodispenser 3 flex on all infection points</li> </ul>
Measurements during intervention phase	<ul style="list-style-type: none"> <li>Observation of hand hygiene compliance with the Observe App</li> <li>Rate of positive blood cultures per 1,000 patient days</li> </ul>
Study results	<p>Significant increase in hand hygiene compliance before aseptic procedures in the intervention group: from 44% (baseline) to 53% (p=0.03)</p> <p>Fewer positive blood cultures in intervention wards (vs. control wards): 0.71 vs. 1.16 / 1,000 patient days</p>



## May 5: World Hand Hygiene Day

# Using the precious s

It cannot be stressed often enough: consistent hand hygiene is one of the most effective measures against infectious diseases, both in clinical as well as public and private settings. International initiatives, such as the annual 'World Hand Hygiene Day' on 5 May, aim to make hand disinfection a routine part of everyday life.

'Seconds save lives – clean your hands!' reads the motto that the World Health Organization used to mark this year's 'World Hand Hygiene Day' on 5 May. The message is clear: a few seconds can be enough to save lives, especially if these seconds are 'invested' in meaningful activities such as a regular and correct hand disinfection!

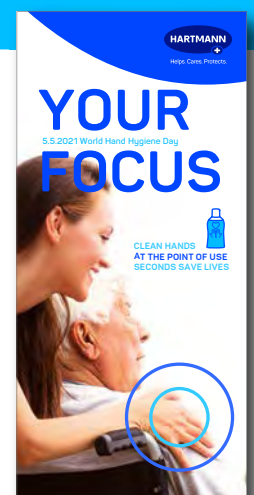
### Our campaign: stickers & online game

HARTMANN/BODE joins the WHO again to support the World Hand Hygiene Day – this time with a motivational campaign aimed at caregivers in outpatient and clinical settings. Following the WHO motto, our slogan is: 'Your focus: clean hands at the point of care/point of use – seconds save lives'. In other words, we want to communicate that the caregivers literally 'have lives in their hands'.

## OUR CONTRIBUTION TO THE WORLD HAND HYGIENE DAY

Order informational brochures, posters, roll ups, counter displays and leaflets with stickers at:  
**BODE SCIENCE CENTER**  
 Tel.: +49 (40)-54 00 6 -111  
 Fax: +49 (40)-54 00 6 - 777  
 E-Mail: [contact\[at\]bode-science-center.com](mailto:contact[at]bode-science-center.com)

You can find the online game 'Five Moments in Hand Hygiene' at:  
[http://bit.ly/onlinegame\\_poc](http://bit.ly/onlinegame_poc)





## Versatile companion, intuitive to use: the Eurodispenser 3 flex

- multiple mounting options directly at the point of care, no accessories required
- patient bed, infusion stand, etc.
- easy mounting and repositioning without tools
- suitable for 500 ml and 1,000 ml bottles
- quick and easy bottle replacement
- robust metal construction, made of stainless steel
- dispenser is completely autoclavable
- optional: drop catcher



# seconds correctly

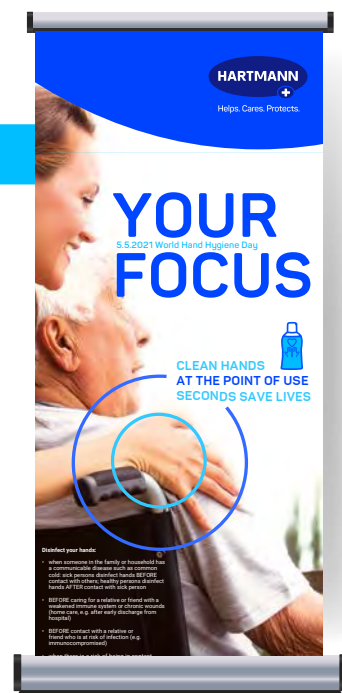
Caregivers can easily protect lives just by cleaning their hands whenever they come into contact with patients (the five moments!). Our campaign includes an informational brochure aimed at hygiene specialists as well as posters, roll ups, counter displays and flyers. The flyers include stickers with our campaign slogan and are intended as a thought-provoking and motivational aid to be displayed at the point of care/point of use. The campaign also includes an online game on the website that serves as a fun way to learn and recall the 'five moments of hand hygiene'.

### Dispenser at the patient's bedside

To effectively improve hand hygiene compliance, disinfectant dispensers should always be located right where they are needed: directly at the point of care/point of use. The 'Eurodispenser 3 flex' disinfectant dispenser range developed by BODE can be easily attached to the patient's bed without any tools! Alternatively, you can use the new 'Wall Holder Plus' (see page 7).

Internet: WHO campaign page on 5.5:

<https://www.who.int/campaigns/world-hand-hygiene-day/2021>





## Events scheduled for 2021 (as of April)

# Let's have a conversation!

You can find HARTMANN and BODE SCIENCE CENTER team at various congresses and conferences, even during the COVID 19 pandemic. We plan to attend the following (virtual) events and look forward to exchanging ideas with you!



Event	Date	Venue	Online
<b>ICPIC</b> <a href="https://conference.icpic.com/?utm_source=DigitalMarketing&amp;utm_medium=email">https://conference.icpic.com/?utm_source=DigitalMarketing&amp;utm_medium=email</a>	14.-17.09.	Geneva, Switzerland	<b>HYBRID</b>

Here we will inform you if there are changes to the above events at short notice.

<https://www.bode-science-center.com/service/event-calendar.html>

DISINFANTS is published on behalf of BODE Chemie GmbH – a company of the HARTMANN GROUP, Hamburg  
[www.bode-science-center.de](http://www.bode-science-center.de)  
[www.hartmann.info](http://www.hartmann.info)  
 Editorial Office: BODE SCIENCE CENTER  
 Text: Dr. Julia Dittmann, Arnd Petry  
 Design: Beling Agentur für visuelle Kommunikation, Hamburg  
 Printed by: Kabel Druck, Hamburg

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 Title: IStockphoto; p. 2/3: IStockphoto; p. 4/5: IStockphoto, Beling Grafikdesign; p. 6/7: Beling Grafikdesign; p. 9: Marco Grundt Fotografie.; p. 10: BODE Chemie; p.11: DRK Stuttgart/ Michael Paul; p. 12: Die Woche 3, no. 7 [1901], shelf mark 4° Ad 635, Berlin State Library Prussian Cultural Heritage; p.13: IStockphoto; 14/15: iStockphoto; p. 18/19: Gettyimages; p. 20/21: BODE Chemie GmbH; P. 22/23: Marco Grundt Fotografie



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